



Figure 1-3. Typical Materials Test Reactor fuel assembly.

Although some Group B fuels are stored at SRS in the Receiving Basin for Offsite Fuel or in L Disassembly Basin, at present most are at domestic universities, foreign research reactors, and DOE research facilities pending shipment to the Site. All of the Group B fuels that are currently stored at SRS are “intact.” The good condition of the cladding and the durability of the alloyed fuel at SRS provide a high degree of confidence that the fuel will not degrade during storage and that actions to correct potential health and safety vulnerabilities will not be necessary before treatment using the technology that DOE proposes to select under the record of decision from this EIS. DOE expects this will be true for most of the foreign and domestic research reactor SNF included in Group B that is yet to be shipped to SRS. However, if DOE determines that any of the Group B fuel presents a health and safety vulnerability, DOE would evaluate the situation and take appropriate action that could include canning the problem fuel or processing the fuel in one of the SRS canyon facilities. This management approach is consistent with the Record of Decision reached under the *Environmental Impact Statement on a Proposed Nuclear Weapons*

Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel.

HEU/LEU Oxides and Silicides Requiring Resizing or Special Packaging (Group C):

Fuels in this group are similar in composition to Group B fuels in that they are aluminum-based, highly enriched uranium (HEU) and low enriched uranium (LEU) oxides and silicides, but their size or shape might preclude packaging them in the disposal canisters proposed for use in a repository without resizing or special packaging considerations. Some fuel in this group is smaller in diameter and longer than Group B fuels or is larger than Group B fuels in both diameter and length; it often comes in odd shapes such as a 1.5-foot by 3-foot (0.46-meter by 0.9-meter) cylinder or a sphere with a diameter of 29 inches (74 centimeters). DOE would have to disassemble or use other volume-reduction activities to place such fuels in a nominal 17-inch direct co-disposal canister (see Section 2.2). At present, much of this fuel is at other DOE sites and in other countries but is scheduled to be received at SRS.

DOE expects that most of the fuel in this category is intact and would be managed as described above for Group B fuels. However, a small amount is not intact. That material consists of some fuel and one target that were cut or sectioned for research purposes. After the research was completed, the fuel and target pieces were canned in 14 cans and placed in wet storage. The origin and location of this material is discussed in Appendix C, Table C-3. The sectioned fuel and target present a potential health and safety vulnerability similar to that of the Group A fuel discussed previously. If a storage can were to leak, DOE would address the problem as described for the Group A fuel to prevent the release of fission products and particulate material to the water of a storage basin. Additionally, the current form of the fuel (i.e., failed) may not be acceptable in a repository because its integrity has been compromised.